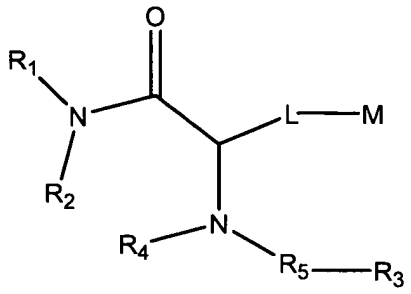
What is claimed is:

1. A compound comprising the formula:



wherein

R_1 comprises a moiety attached to the nitrogen selected from the group consisting of a substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl and C_{2-12} aminoalkyl where at least one of the substituents is selected from the group consisting of substituted and unsubstituted straight chained C_{1-12} alkyls, C_{2-12} oxaalkyls or C_{2-12} aminoalkyls and substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered rings;

R_2 comprises a moiety attached to the nitrogen selected from the group consisting of hydrogen, a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring;

R_3 and R_4 are each independently selected from the group consisting of hydrogen, a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, with the proviso that R_3 and R_4 are not both hydrogen;

R_5 is selected from the group consisting of a carbonyl, a substituted or unsubstituted C_{1-3} alkyl, a substituted or unsubstituted -C_{1-3} alkyl-C(O), a substituted or unsubstituted -C(O)-C_{1-3} alkyl, and a substituted or unsubstituted -C(O)C(O)C_{1-3} alkyl;

M is a substituent capable of complexing with a protein metal ion; and

L is a substituent comprising a chain of 3-12 atoms connecting the M substituent to the carbon atom alpha to the L substituent.

2. A compound according to claim 1 wherein the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted straight chained C_{1-6} alkyl, C_{2-6} oxaalkyl or C_{2-6} aminoalkyl.

3. A compound according to claim 1 wherein the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted straight chained C_{1-4} alkyl, C_{2-4} oxaalkyl or C_{2-4} aminoalkyl.

4. A compound according to claim 1 wherein the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is 1, 2, 3, 4, 5, or 6, atoms in length.

5. A compound according to claim 1 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 renders the alkyl, oxaalkyl or aminoalkyl a branched alkyl, oxaalkyl or aminoalkyl.

6. A compound according to claim 1 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted or unsubstituted five or six membered ring.

7. A compound according to claim 1 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted or unsubstituted aromatic ring.

8. A compound according to claim 1 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted or unsubstituted aromatic ring comprising one or more heteroatoms.

9. A compound according to claim 1 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted or unsubstituted aryl.

10. A compound according to claim 1 wherein R_2 comprise a moiety selected from the group consisting of hydrogen and a moiety that has a maximum chain length of non-hydrogen atoms of six or less.

11. A compound according to claim 1 wherein R_2 comprise a moiety selected from the group consisting of a C_{1-4} alkyl, C_{2-4} aminoalkyl or C_{2-4} oxaalkyl, -C(O)H, and -C(O)-C_{1-3} alkyl.

12. A compound according to claim 1 wherein R_3 or R_4 comprise a moiety selected from the group consisting of a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, when the other of R_3 and R_4 is a moiety selected from the group consisting of hydrogen and a moiety that has a maximum chain length of non-hydrogen atoms of six or less.

13. A compound according to claim 1 wherein R_3 or R_4 comprises a moiety selected from the group consisting of a substituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl and C_{2-12} oxaalkyl where at least one of the substituents is selected from the group consisting of substituted and unsubstituted straight chained C_{1-12} alkyls, C_{2-12} oxaalkyls or C_{2-12} aminoalkyls and substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered rings and the other comprises a member of the group consisting of C_{1-4} alkyl, C_{2-4} aminoalkyl or C_{2-4} oxaalkyl, -C(O)H, and -C(O)-C_{1-3} alkyl.

14. A compound according to claim 1 wherein R_3 comprises a substituted 6 membered ring that is substituted beta relative to R_5.

15. A compound according to claim 1 wherein R_3 comprises a substituted aryl that is substituted meta relative to R_5.

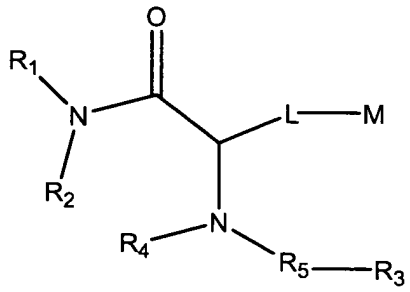
16. A compound according to claim 1 wherein R_3 comprises a substituted aryl that is substituted meta relative to R_5 with a substituent selected from the group consisting of a C_{1-4} alkyl, C_{2-4} aminoalkyl or C_{2-4} oxaalkyl, -C(O)H, -C(O)-C_{1-3} alkyl.

17. A compound according to claim 1 wherein L comprises a cinnamate moiety.

18. A compound according to claim 1 wherein M comprises a member selected from the group consisting of trifluoroacetyl (-C(O)-CF_3), -NH-P(O)OH-CH_3, sulfonamides (-SO_2NH_2), thiols(-SH), and carbonyl groups having the formula -C(O)-R_7 wherein R_7 is hydroxylamino, hydroxyl, amino, alkylamino, or an alkyloxy group.

19. A compound according to claim 1 wherein M comprises a hydroxamic acid moiety.

20. A compound comprising the formula:



wherein

R_1 and R_2 each independently comprise a moiety attached to the nitrogen selected from the group consisting of hydrogen, a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, with the proviso that R_1 and R_2 are not both hydrogen;

one of R_3 and R_4 is selected from the group consisting of a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted or unsubstituted

3, 4, 5, 6, 7 or 8 membered ring, when the other of R_3 and R_4 is a moiety selected from the group consisting of hydrogen and a moiety that has a maximum chain length of non-hydrogen atoms of six or less.

R_5 is selected from the group consisting of a carbonyl, a substituted or unsubstituted C_{1-3} alkyl, a substituted or unsubstituted -C_{1-3} alkyl-C(O), a substituted or unsubstituted -C(O)-C_{1-3} alkyl, and a substituted or unsubstituted -C(O)C(O)C_{1-3} alkyl;

M is a substituent capable of complexing with a protein metal ion; and

L is a substituent comprising a chain of 3-12 atoms connecting the M substituent to the carbon atom alpha to the L substituent.

21. A compound according to claim 20 wherein R_3 or R_4 is selected from the group consisting of a substituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl and C_{2-12} oxaalkyl where at least one of the substituents is selected from the group consisting of substituted and unsubstituted straight chained C_{1-12} alkyls, C_{2-12} oxaalkyls or C_{2-12} aminoalkyls and substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered rings and the other is selected from the group consisting of C_{1-4} alkyl, C_{2-4} aminoalkyl or C_{2-4} oxaalkyl, -C(O)H, -C(O)-C_{1-3} alkyl.

22. A compound according to claim 20 wherein R_1 comprises a moiety attached to the nitrogen selected from the group consisting of a substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl and C_{2-12} aminoalkyl where at least one of the substituents is selected from the group consisting of substituted and unsubstituted straight chained C_{1-12} alkyls, C_{2-12} oxaalkyls or C_{2-12} aminoalkyls and substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered rings.

23. A compound according to claim 22 wherein the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted straight chained C_{1-6} alkyl, C_{2-6} oxaalkyl or C_{2-6} aminoalkyl.

24. A compound according to claim 22 wherein the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted straight chained C_{1-4} alkyl, C_{2-4} oxaalkyl or C_{2-4} aminoalkyl.

25. A compound according to claim 22 wherein the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is 1, 2, 3, 4, 5, or 6, atoms in length.

26. A compound according to claim 22 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 renders the alkyl, oxaalkyl or aminoalkyl a branched alkyl, oxaalkyl or aminoalkyl.

27. A compound according to claim 22 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted or unsubstituted five or six membered ring.

28. A compound according to claim 22 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted or unsubstituted aromatic ring.

29. A compound according to claim 22 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted or unsubstituted aromatic ring comprising one or more heteroatoms.

30. A compound according to claim 22 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted or unsubstituted aryl.

31. A compound according to claim 22 wherein R_2 comprise a moiety selected from the group consisting of hydrogen and a moiety that has a maximum chain length of non-hydrogen atoms of six or less.

32. A compound according to claim 22 wherein R_2 comprise a moiety selected from the group consisting of a C_{1-4} alkyl, C_{2-4} aminoalkyl or C_{2-4} oxaalkyl, -C(O)H, and -C(O)-C_{1-3} alkyl.

33. A compound according to claim 20 wherein the other of R_3 and R_4 is a moiety that has a maximum chain length of non-hydrogen atoms of four or less.

34. A compound according to claim 20 wherein R_3 or R_4 comprises a moiety selected from the group consisting of a substituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl and C_{2-12} oxaalkyl where at least one of the substituents is selected from the group consisting of substituted and unsubstituted straight chained C_{1-12} alkyls, C_{2-12} oxaalkyls or C_{2-12} aminoalkyls and substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered rings and the other comprises a member of the group consisting of C_{1-4} alkyl, C_{2-4} aminoalkyl or C_{2-4} oxaalkyl, -C(O)H, and -C(O)-C_{1-3} alkyl.

35. A compound according to claim 20 wherein R_3 comprises a substituted 6 membered ring that is substituted beta relative to R_5.

36. A compound according to claim 20 wherein R_3 comprises a substituted aryl that is substituted meta relative to R_5.

37. A compound according to claim 20 wherein R_3 comprises a substituted aryl that is substituted meta relative to R_5 with a substituent selected from the group consisting of a C_{1-4} alkyl, C_{2-4} aminoalkyl or C_{2-4} oxaalkyl, -C(O)H, -C(O)-C_{1-3} alkyl.

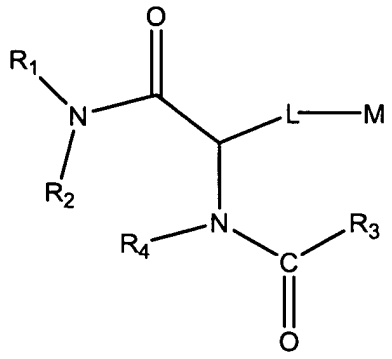
38. A compound according to claim 20 wherein L comprises a cinnamate moiety.

39. A compound according to claim 20 wherein M comprises a member selected from the group consisting of trifluoroacetyl (-C(O)-CF_3), -NH-P(O)OH-CH_3, sulfonamides (-SO_2NH_2),

thiols(-SH), and carbonyl groups having the formula -C(O)-R_7 wherein R_7 is hydroxylamino, hydroxyl, amino, alkylamino, or an alkyloxy group.

40. A compound according to claim 20 wherein M comprises a hydroxamic acid moiety.

41. A compound comprising the formula



wherein

R_1 and R_2 each independently comprise a moiety attached to the nitrogen selected from the group consisting of hydrogen, a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, with the proviso that R_1 and R_2 are not both hydrogen;

R_3 and R_4 are each independently selected from the group consisting of a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring;

M is a substituent capable of complexing with a protein metal ion; and

L is a substituent comprising a chain of 3-12 atoms connecting the M substituent to the carbon atom alpha to the L substituent.

42. A compound according to claim 41 wherein the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted straight chained C_{1-6} alkyl, C_{2-6} oxaalkyl or C_{2-6} aminoalkyl.

43. A compound according to claim 41 wherein the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted straight chained C_{1-4} alkyl, C_{2-4} oxaalkyl or C_{2-4} aminoalkyl.

44. A compound according to claim 41 wherein the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is 1, 2, 3, 4, 5, or 6, atoms in length.

45. A compound according to claim 41 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 renders the alkyl, oxaalkyl or aminoalkyl a branched alkyl, oxaalkyl or aminoalkyl.

46. A compound according to claim 41 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted or unsubstituted five or six membered ring.

47. A compound according to claim 41 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted or unsubstituted aromatic ring.

48. A compound according to claim 41 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted or unsubstituted aromatic ring comprising one or more heteroatoms.

49. A compound according to claim 41 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted or unsubstituted aryl.

50. A compound according to claim 41 wherein R_2 comprise a moiety selected from the group consisting of hydrogen and a moiety that has a maximum chain length of non-hydrogen atoms of six or less.

51. A compound according to claim 41 wherein R_2 comprise a moiety selected from the group consisting of a C_{1-4} alkyl, aminoalkyl or oxaalkyl, -C(O)H, and -C(O)-C_{1-3} alkyl.

52. A compound according to claim 41 wherein R_3 or R_4 comprise a moiety selected from the group consisting of a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, when the other of R_3 and R_4 is a moiety selected from the group consisting of hydrogen and a moiety that has a maximum chain length of non-hydrogen atoms of six or less.

53. A compound according to claim 41 wherein R_3 or R_4 comprises a moiety selected from the group consisting of a substituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl and C_{2-12} oxaalkyl where at least one of the substituents is selected from the group consisting of substituted and unsubstituted straight chained C_{1-12} alkyls, C_{2-12} oxaalkyls or C_{2-12} aminoalkyls and substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered rings and the other comprises a member of the group consisting of C_{1-4} alkyl, C_{2-4} aminoalkyl or C_{2-4} oxaalkyl, -C(O)H, and -C(O)-C_{1-3} alkyl.

54. A compound according to claim 41 wherein R_3 comprises a substituted 6 membered ring that is substituted beta relative to R_5.

55. A compound according to claim 41 wherein R_3 comprises a substituted aryl that is substituted meta relative to R_5.

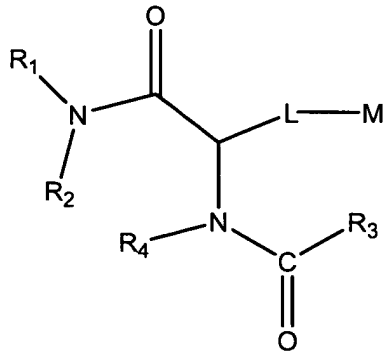
56. A compound according to claim 41 wherein R_3 comprises a substituted aryl that is substituted meta relative to R_5 with a substituent selected from the group consisting of a C_{1-4} alkyl, C_{2-4} aminoalkyl or C_{2-4} oxaalkyl, -C(O)H, -C(O)-C_{1-3} alkyl.

57. A compound according to claim 41 wherein L comprises a cinnamate moiety.

58. A compound according to claim 41 wherein M comprises a member selected from the group consisting of trifluoroacetyl (-C(O)-CF_3), -NH-P(O)OH-CH_3, sulfonamides (-SO_2NH_2), thiols(-SH), and carbonyl groups having the formula -C(O)-R_7 wherein R_7 is hydroxylamino, hydroxyl, amino, alkylamino, or an alkyloxy group.

59. A compound according to claim 41 wherein M comprises a hydroxamic acid moiety.

60. A compound comprising the formula



wherein

R_1 comprises a moiety attached to the nitrogen selected from the group consisting of a substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl and C_{2-12} aminoalkyl where at least one of the substituents is selected from the group consisting of substituted and unsubstituted straight chained C_{1-12} alkyls, C_{2-12} oxaalkyls or C_{2-12} aminoalkyls and substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered rings;

R_2 comprises a moiety attached to the nitrogen selected from the group consisting of hydrogen, a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring;

R_3 and R_4 are each independently selected from the group consisting of hydrogen, a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, with the proviso that R_3 and R_4 are not both hydrogen;

M is a substituent capable of complexing with a protein metal ion; and

L is a substituent comprising a chain of 3-12 atoms connecting the M substituent to the carbon atom alpha to the L substituent.

61. A compound according to claim 60 wherein the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted straight chained C_{1-6} alkyl, C_{2-6} oxaalkyl or C_{2-6} aminoalkyl.

62. A compound according to claim 60 wherein the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted straight chained C_{1-4} alkyl, C_{2-4} oxaalkyl or C_{2-4} aminoalkyl.

63. A compound according to claim 60 wherein the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is 1, 2, 3, 4, 5, or 6, atoms in length.

64. A compound according to claim 60 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 renders the alkyl, oxaalkyl or aminoalkyl a branched alkyl, oxaalkyl or aminoalkyl.

65. A compound according to claim 60 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted or unsubstituted five or six membered ring.

66. A compound according to claim 60 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted or unsubstituted aromatic ring.

67. A compound according to claim 60 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted or unsubstituted aromatic ring comprising one or more heteroatoms.

68. A compound according to claim 60 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted or unsubstituted aryl.

69. A compound according to claim 60 wherein R_2 comprise a moiety selected from the group consisting of hydrogen and a moiety that has a maximum chain length of non-hydrogen atoms of six or less.

70. A compound according to claim 60 wherein R_2 comprise a moiety selected from the group consisting of a C_{1-4} alkyl, C_{2-4} aminoalkyl or C_{2-4} oxaalkyl, -C(O)H, and -C(O)-C_{1-3} alkyl.

71. A compound according to claim 60 wherein R_3 or R_4 comprise a moiety selected from the group consisting of a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, when the other of R_3 and R_4 is a moiety selected from the group consisting of hydrogen and a moiety that has a maximum chain length of non-hydrogen atoms of six or less.

72. A compound according to claim 60 wherein R_3 or R_4 comprises a moiety selected from the group consisting of a substituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl and C_{2-12} oxaalkyl where at least one of the substituents is selected from the group consisting of substituted and unsubstituted straight chained C_{1-12} alkyls, C_{2-12} oxaalkyls or C_{2-12} aminoalkyls and substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered rings and the other comprises a member of the group consisting of C_{1-4} alkyl, C_{2-4} aminoalkyl or C_{2-4} oxaalkyl, -C(O)H, and -C(O)-C_{1-3} alkyl.

73. A compound according to claim 60 wherein R_3 comprises a substituted 6 membered ring that is substituted beta relative to R_5.

74. A compound according to claim 60 wherein R_3 comprises a substituted aryl that is substituted meta relative to R_5.

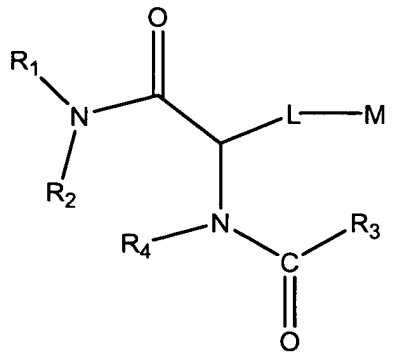
75. A compound according to claim 60 wherein R_3 comprises a substituted aryl that is substituted meta relative to R_5 with a substituent selected from the group consisting of a C_{1-4} alkyl, C_{2-4} aminoalkyl or C_{2-4} oxaalkyl, -C(O)H, -C(O)-C_{1-3} alkyl.

76. A compound according to claim 60 wherein L comprises a cinnamate moiety.

77. A compound according to claim 60 wherein M comprises a member selected from the group consisting of trifluoroacetyl (-C(O)-CF_3), -NH-P(O)OH-CH_3, sulfonamides (-SO_2NH_2), thiols(-SH), and carbonyl groups having the formula -C(O)-R_7 wherein R_7 is hydroxylamino, hydroxyl, amino, alkylamino, or an alkyloxy group.

78. A compound according to claim 60 wherein M comprises a hydroxamic acid moiety.

79. A compound comprising the formula



wherein

R_1 and R_2 each independently comprise a moiety attached to the nitrogen selected from the group consisting of hydrogen, a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, with the proviso that R_1 and R_2 are not both hydrogen;

one of R_3 and R_4 is selected from the group consisting of a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, when the other of R_3 and R_4 is a moiety selected from the group consisting of hydrogen and a moiety that has a maximum chain length of non-hydrogen atoms of six or less.

M is a substituent capable of complexing with a protein metal ion; and

L is a substituent comprising a chain of 3-12 atoms connecting the M substituent to the carbon atom alpha to the L substituent.

80. A compound according to claim 79 wherein R_3 or R_4 is selected from the group consisting of a substituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl and C_{2-12} oxaalkyl where at least one of the substituents is selected from the group consisting of substituted and unsubstituted straight chained C_{1-12} alkyls, C_{2-12} oxaalkyls or C_{2-12} aminoalkyls and substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered rings and the other is selected from the group consisting of C_{1-4} alkyl, C_{2-4} aminoalkyl or C_{2-4} oxaalkyl, -C(O)H, -C(O)-C_{1-3} alkyl.

81. A compound according to claim 79 wherein R_1 comprises a moiety attached to the nitrogen selected from the group consisting of a substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl and C_{2-12} aminoalkyl where at least one of the substituents is selected from the group consisting of substituted and unsubstituted straight chained C_{1-12} alkyls, C_{2-12} oxaalkyls or C_{2-12} aminoalkyls and substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered rings.

82. A compound according to claim 79 wherein the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted straight chained C_{1-6} alkyl, C_{2-6} oxaalkyl or C_{2-6} aminoalkyl.

83. A compound according to claim 79 wherein the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted straight chained C_{1-4} alkyl, C_{2-4} oxaalkyl or C_{2-4} aminoalkyl.

84. A compound according to claim 79 wherein the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is 1, 2, 3, 4, 5, or 6, atoms in length.

85. A compound according to claim 79 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 renders the alkyl, oxaalkyl or aminoalkyl a branched alkyl, oxaalkyl or aminoalkyl.

86. A compound according to claim 79 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted or unsubstituted five or six membered ring.

87. A compound according to claim 79 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted or unsubstituted aromatic ring.

88. A compound according to claim 79 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted or unsubstituted aromatic ring comprising one or more heteroatoms.

89. A compound according to claim 79 wherein the substituent attached to the substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl or C_{2-12} aminoalkyl of R_1 is a substituted or unsubstituted aryl.

90. A compound according to claim 79 wherein R_2 comprise a moiety selected from the group consisting of hydrogen and a moiety that has a maximum chain length of non-hydrogen atoms of six or less.

91. A compound according to claim 79 wherein R_2 comprise a moiety selected from the group consisting of a C_{1-4} alkyl, C_{2-4} aminoalkyl or C_{2-4} oxaalkyl, -C(O)H, and -C(O)-C_{1-3} alkyl.

92. A compound according to claim 79 wherein the other of R_3 and R_4 is a moiety that has a maximum chain length of non-hydrogen atoms of four or less.

93. A compound according to claim 79 wherein R_3 or R_4 comprises a moiety selected from the group consisting of a substituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl and C_{2-12} oxaalkyl where at least one of the substituents is selected from the group consisting of substituted and unsubstituted straight chained C_{1-12} alkyls, C_{2-12} oxaalkyls or C_{2-12} aminoalkyls and substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered rings and the other comprises a member of the group consisting of C_{1-4} alkyl, C_{2-4} aminoalkyl or C_{2-4} oxaalkyl, -C(O)H, and -C(O)-C_{1-3} alkyl.

94. A compound according to claim 79 wherein R_3 comprises a substituted 6 membered ring that is substituted beta relative to R_5.

95. A compound according to claim 79 wherein R_3 comprises a substituted aryl that is substituted meta relative to R_5.

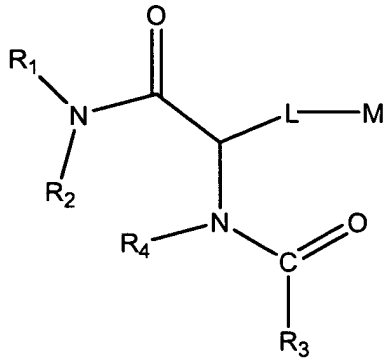
96. A compound according to claim 79 wherein R_3 comprises a substituted aryl that is substituted meta relative to R_5 with a substituent selected from the group consisting of a C_{1-4} alkyl, C_{2-4} aminoalkyl or C_{2-4} oxaalkyl, -C(O)H, -C(O)-C_{1-3} alkyl.

97. A compound according to claim 79 wherein L comprises a cinnamate moiety.

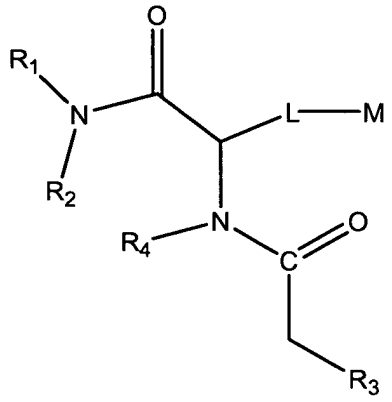
98. A compound according to claim 79 wherein M comprises a member selected from the group consisting of trifluoroacetyl (-C(O)-CF_3), -NH-P(O)OH-CH_3, sulfonamides (-SO_2NH_2), thiols(-SH), and carbonyl groups having the formula -C(O)-R_7 wherein R_7 is hydroxylamino, hydroxyl, amino, alkylamino, or an alkyloxy group.

99. A compound according to claim 79 wherein M comprises a hydroxamic acid moiety.

100. A compound comprising the formula



or



wherein

R_1 and R_2 each independently comprise a moiety attached to the nitrogen selected from the group consisting of hydrogen, a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, with the proviso that R_1 and R_2 are not both hydrogen;

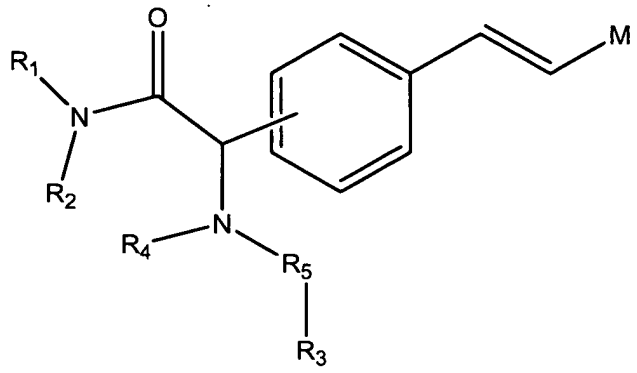
R_3 comprises a substituted six membered ring attached to the carbonyl carbon or methylene wherein at least one of the substituents of the six membered ring is beta relative to atom attached to the carbonyl carbon or methylene;

R_4 comprises a moiety selected from the group consisting of hydrogen, a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring;

M is a substituent capable of complexing with a protein metal ion; and

L is a substituent comprising a chain of 3-12 atoms connecting the M substituent to the carbon atom alpha to the L substituent.

101. A compound comprising the formula:



wherein

R_1 comprises a moiety attached to the nitrogen selected from the group consisting of a substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl and C_{2-12} aminoalkyl where at least one of the substituents is selected from the group consisting of substituted and unsubstituted straight chained C_{1-12} alkyls, C_{2-12} oxaalkyls or C_{2-12} aminoalkyls and substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered rings;

R_2 comprises a moiety attached to the nitrogen selected from the group consisting of hydrogen, a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring;

R_3 and R_4 are each independently selected from the group consisting of hydrogen, a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a

substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, with the proviso that R_3 and R_4 are not both hydrogen;

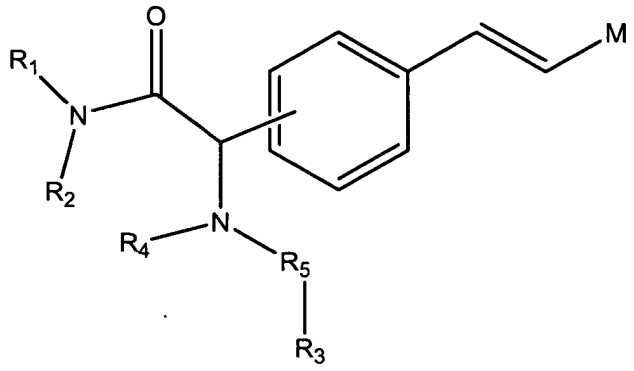
R_5 is selected from the group consisting of a carbonyl, a substituted or unsubstituted C_{1-3} alkyl, a substituted or unsubstituted -C_{1-3} alkyl-C(O), a substituted or unsubstituted -C(O)-C_{1-3} alkyl, and a substituted or unsubstituted -C(O)C(O)C_{1-3} alkyl; and

M is a substituent capable of complexing with a protein metal ion.

102. A compound according to claim 101 wherein the phenyl ring is meta substituted.

103. A compound according to claim 101 wherein the phenyl ring is para substituted.

104. A compound comprising the formula:



wherein

R_1 and R_2 each independently comprise a moiety attached to the nitrogen selected from the group consisting of hydrogen, a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, with the proviso that R_1 and R_2 are not both hydrogen;

one of R_3 and R_4 is selected from the group consisting of a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, when the other of R_3 and R_4 is a moiety selected from the group

consisting of hydrogen and a moiety that has a maximum chain length of non-hydrogen atoms of six or less.

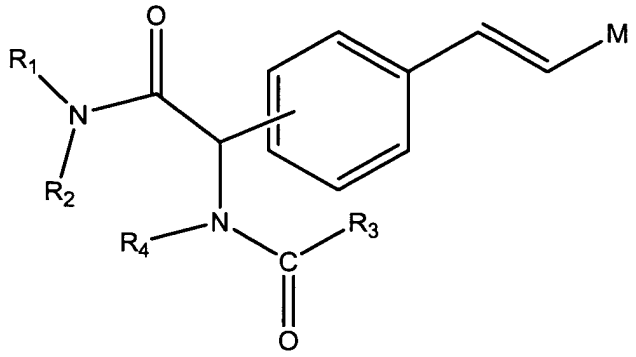
R_5 is selected from the group consisting of a carbonyl, a substituted or unsubstituted C_{1-3} alkyl, a substituted or unsubstituted -C_{1-3} alkyl-C(O), a substituted or unsubstituted -C(O)-C_{1-3} alkyl, and a substituted or unsubstituted -C(O)C(O)C_{1-3} alkyl; and

M is a substituent capable of complexing with a protein metal ion.

105. A compound according to claim 104 wherein the phenyl ring is meta substituted.

106. A compound according to claim 104 wherein the phenyl ring is para substituted.

107. A compound comprising the formula



wherein

R_1 and R_2 each independently comprise a moiety attached to the nitrogen selected from the group consisting of hydrogen, a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, with the proviso that R_1 and R_2 are not both hydrogen;

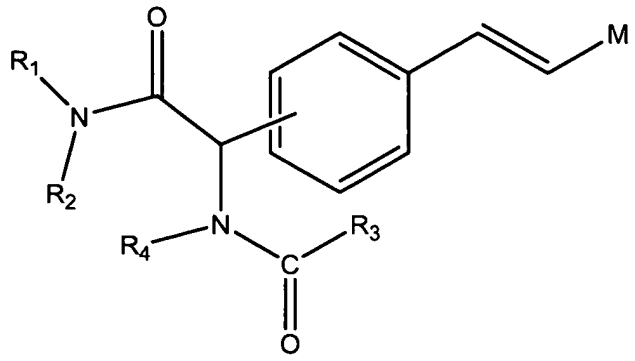
R_3 and R_4 are each independently selected from the group consisting of a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring; and

M is a substituent capable of complexing with a protein metal ion.

108. A compound according to claim 107 wherein the phenyl ring is meta substituted.

109. A compound according to claim 107 wherein the phenyl ring is para substituted.

110. A compound comprising the formula



wherein

R_1 comprises a moiety attached to the nitrogen selected from the group consisting of a substituted straight chained C_{1-12} alkyl, C_{2-12} oxaalkyl and C_{2-12} aminoalkyl where at least one of the substituents is selected from the group consisting of substituted and unsubstituted straight chained C_{1-12} alkyls, C_{2-12} oxaalkyls or C_{2-12} aminoalkyls and substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered rings;

R_2 comprises a moiety attached to the nitrogen selected from the group consisting of hydrogen, a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring;

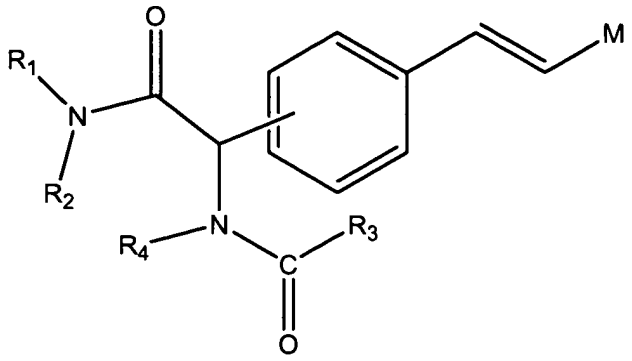
R_3 and R_4 are each independently selected from the group consisting of hydrogen, a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, with the proviso that R_3 and R_4 are not both hydrogen; and

M is a substituent capable of complexing with a protein metal ion.

111. A compound according to claim 110 wherein the phenyl ring is meta substituted.

112. A compound according to claim 110 wherein the phenyl ring is para substituted.

113. A compound comprising the formula



wherein

R_1 and R_2 each independently comprise a moiety attached to the nitrogen selected from the group consisting of hydrogen, a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, with the proviso that R_1 and R_2 are not both hydrogen;

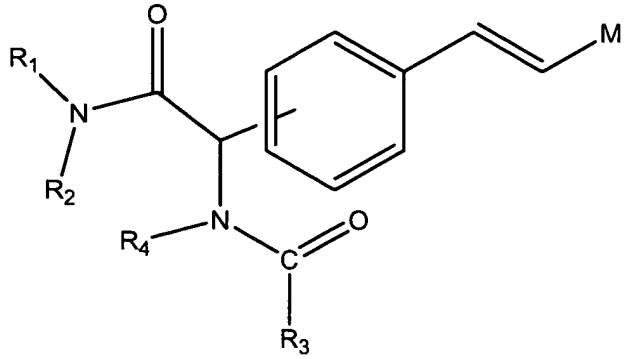
one of R_3 and R_4 is selected from the group consisting of a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted or unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, when the other of R_3 and R_4 is a moiety selected from the group consisting of hydrogen and a moiety that has a maximum chain length of non-hydrogen atoms of six or less.

M is a substituent capable of complexing with a protein metal ion.

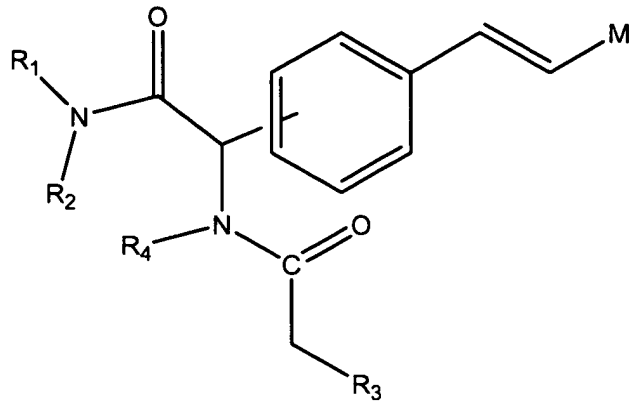
114. A compound according to claim 113 wherein the phenyl ring is meta substituted.

115. A compound according to claim 113 wherein the phenyl ring is para substituted.

116. A compound comprising the formula



or



wherein

R_1 and R_2 each independently comprise a moiety attached to the nitrogen selected from the group consisting of hydrogen, a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring, with the proviso that R_1 and R_2 are not both hydrogen;

R_3 comprises a substituted six membered ring attached to the carbonyl carbon or methylene wherein at least one of the substituents of the six membered ring is beta relative to atom attached to the carbonyl carbon or methylene;

R_4 comprises a moiety selected from the group consisting of hydrogen, a substituted or unsubstituted straight chained C_{1-12} alkyl, C_{2-12} aminoalkyl or C_{2-12} oxaalkyl, and a substituted and unsubstituted 3, 4, 5, 6, 7 or 8 membered ring;

M is a substituent capable of complexing with a protein metal ion.

117. A compound according to claim 116 wherein the phenyl ring is meta substituted.

118. A compound according to claim 116 wherein the phenyl ring is para substituted.